



**Technical Service
BULLETIN**

August 23, 2004

Title:

M.I.L. "ON" DTC P0031 AND/OR P2238

Models:

'04 Highlander (2AZ-FE)

**ENGINE
EG032-04**

Introduction Under certain driving conditions, some 2004 model year Highlander vehicles with 2AZ-FE engines may exhibit a M.I.L. "ON" condition with one or both of the following DTC's.

- P0031 – Oxygen (A/F) Sensor Heater Control Circuit Low (Bank 1 Sensor 1)
- P2238 – Oxygen Sensor Pumping Current Circuit Low (For A/F Sensor) (Bank 1 Sensor 1)

The A/F sensor manufacturing process and the Engine Control Module (ECM) (SAE term: Powertrain Control Module/PCM) logic have been modified to improve these conditions.

CAUTION:

Version 11.0a or later Diagnostic Tester software is required.

Applicable Vehicles

- **2004** model year **Highlander** vehicles equipped with **2AZ-FE engines** produced **BEFORE** the Production Change Effective VINs shown below.

Production Change Information

MODEL	ENGINE	DRIVETRAIN	PRODUCTION CHANGE EFFECTIVE VIN
Highlander	2AZ-FE	2WD	JTEGD21A#40103186
		4WD	JTEHD21A#40032636

Warranty Information

OP CODE	DESCRIPTION	TIME	OFF	T1	T2
EG4013	Recalibrate ECM (PCM) Engine and R & R A/F Sensor	1.7	89661-48691 89661-48711	8A	99

Applicable Warranty*:

This repair is covered under the Toyota Specified Major Emission Control Component Warranty. This warranty is in effect for 96 months or 80,000 miles, whichever occurs first, from the vehicle's in-service date.

* Warranty application is limited to correction of a problem based upon a customer's specific complaint.





Parts Information

PREVIOUS PART NUMBER	CURRENT PART NUMBER	PART NAME	QTY
89467-48070	Same	Sensor, Air Fuel Ratio	1
N/A	00451-00001-LBL	Authorized Modifications Label	1

NOTE:

Authorized Modification Labels may be ordered in packages of 25 from the Materials Distribution Center (MDC) through Dealer Daily Dealer Support Materials System, or by calling the MDC at 1-800-622-2033.

Required SSTs

SPECIAL SERVICE TOOLS (SSTs)	PART NUMBER	QUANTITY
Toyota Diagnostic Tester Kit* 	01001271	1
12 Megabyte Diagnostic Tester Program Card with version 11.0a Software (or later)* 	01002593-005	1

* Essential SSTs.

NOTE:

Additional Diagnostic Tester Kits, Program Cards or other SSTs may be ordered by calling SPX/OTC at 1-800-933-8335.

Calibration Information

MODEL	VDS	CURRENT CALIBRATION ID	NEW CALIBRATION ID
2WD 2AZ-FE	GD21A	34841000	34841200
	DD21A	34841100	
4WD 2AZ-FE	HD21A	34843000	34843200
		34843100	

Repair Procedure

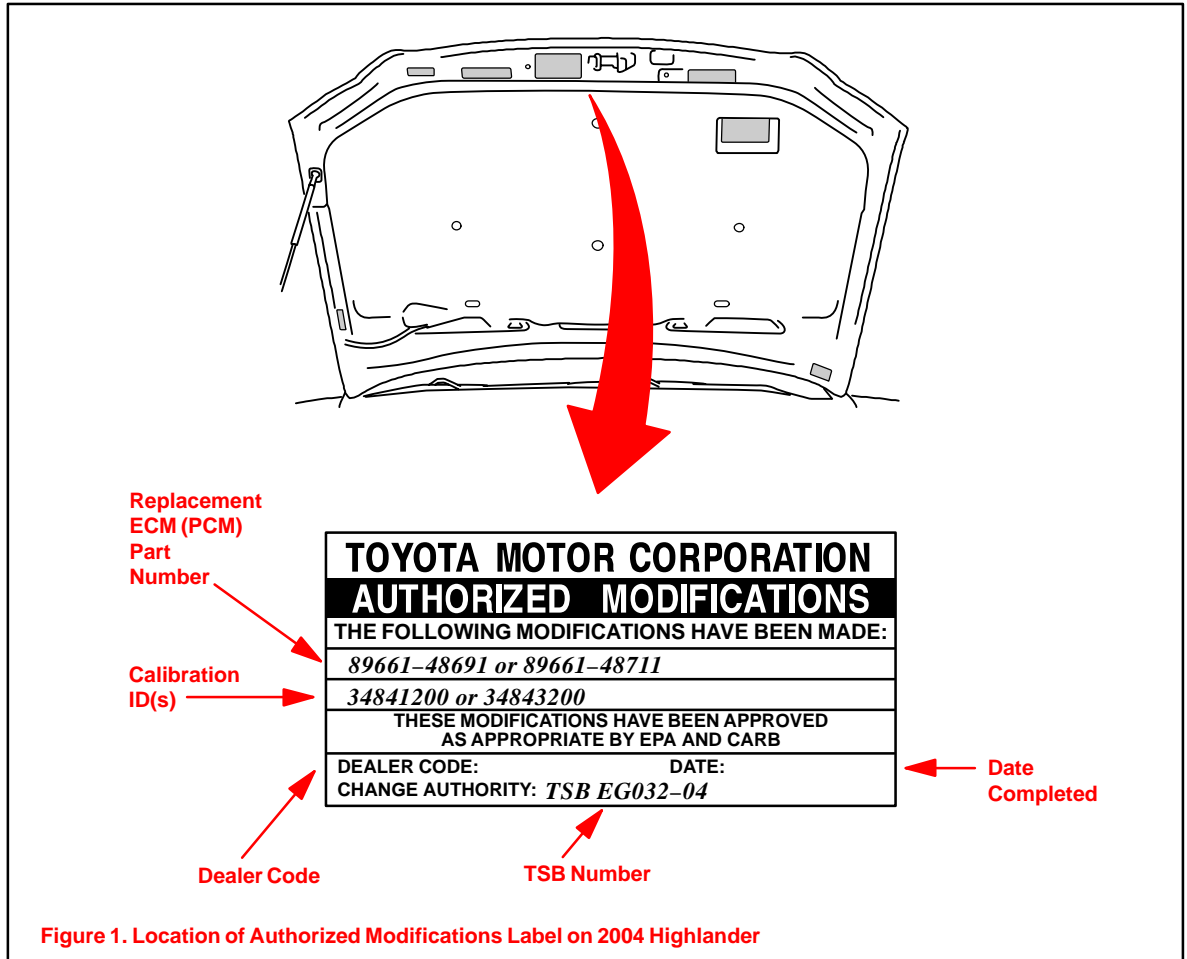
For DTC P0031 and/or P2238

1. Replace Bank 1 Sensor 1 A/F Sensor.
2. Perform ECM (PCM) recalibration (see Calibration Procedure) with New Calibration ID as shown above in Calibration Information table.

Calibration Procedure

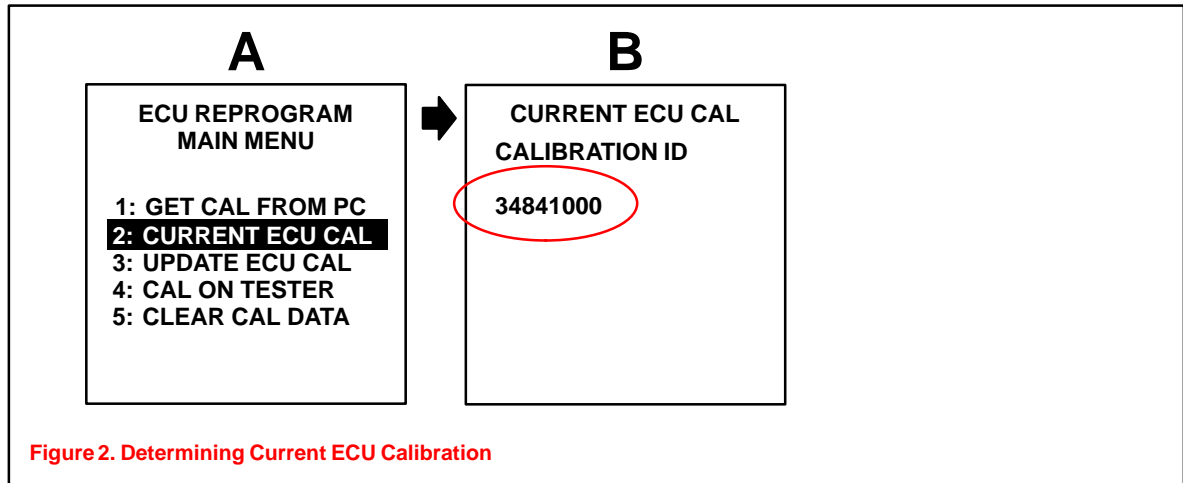
Verify Vehicle Condition

1. Check for the Authorized Modifications Label affixed to the vehicle in the location shown in Figure 1. Confirm if ECM (PCM) calibration has been updated. If not the latest ECM (PCM) calibration – **go to step 2.**



Calibration Procedure
(Continued)

2. Connect the Diagnostic Tester to the vehicle's DLC3 connector and select CURRENT ECU CAL from the ECU REPROGRAM MAIN MENU. Determine the vehicle's current ECU calibration (see Figure 2).



NOTE:

- If Calibration ID matches "Current Calibration ID" as shown on page 2, proceed with flash reprogramming.
- If Calibration ID matches "New Calibration ID" as shown on page 2, this vehicle has already been reprogrammed. Refer to Repair Manual or TIS for diagnosis.

3. If ECU calibration ID is not the same as the "New Calibration ID" listed previously, proceed to Flash Reprogram ECM (PCM).

Flash Reprogram ECM (PCM)

1. Follow the procedures outlined in TSB No. SS002-01, "ECU Flash Reprogramming Process," and flash the ECM (PCM) with new calibration file update.
2. Enter the required information on the Authorized Modifications Label and affix it to the vehicle at the location shown in Figure 1 (page 3). The Authorized Modifications Label is available through the MDC, P/N 00451-00001-LBL.
3. Calibration update is complete.